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ABSTRACT

A narrowband interference cancellation system, method and digital signal processor is disclosed that removes narrowband interference in wide band communication systems. The system includes a narrowband processing component, wideband processing component, soft metric generator and at least one filter. The system is configured to receive a signal, identify one or more narrowband interferers in the received signal and filter out identified narrowband interferers. The narrowband processing component includes a filter bank configured to separate the received signal into a predetermined number of channel bands and identify a band with interference. The wide band processing component provides an average level for an unfiltered version of the received signal. The soft decision metric generator produces metrics based on predetermined thresholds. The filters receive coefficients that are determined using outputs from the soft decision metric generator that are first averaged using long term integrators and then stored in lookup tables.